# **SIEMENS**

Product data sheet 3RF2950-0GA16



LOAD MONITORING CURRENT RANGE 50 A 40 DEGREES C 400-600 V / 24 V AC/DC TO SEMICON. RELAY/CONTACT. 3RF2

General technical data:		
product brand name		SIRIUS
product designation		load monitoring
Product function		solid-state relay / solid-state contactor 3RF2
Number of poles / for main current circuit		0
Protection class IP		IP20
Product designation / _1 / of the accessories that can be ordered		sealable end cover
Manufacturer article number / _1 / of the accessories that can be ordered		3RF2900-0RA88
Hole diameter / of the current transformer	mm	17
Number of partial loads / for load monitoring		12
Ambient temperature		
during operating	°C	-25 +60
during storage	°C	-55 +80
Installation altitude / at a height over sea level / maximum	m	1,000
Resistance against vibration / according to IEC 60068-2-6		2g
Resistance against shock / according to IEC 60068-2-27		15g / 11 ms
Item designation		
<ul> <li>according to DIN 40719 extendable after IEC 204-2 / according to IEC 750</li> </ul>		A

Main circuit:		
Number of NO contacts / for main contacts		0
Number of NC contacts / for main contacts		0
Operating current		
• at AC-1 / at 400 V / rated value	Α	50
Derating temperature	°C	40
Operating voltage		
• at 50 Hz / at AC / rated value	V	400 600
• at 60 Hz / at AC / rated value	V	400 600
Working area related to the operating voltage		
• at 50 Hz / for AC	V	340 660
• at 60 Hz / for AC	V	340 660
Operating frequency		
rated value	Hz	50 60
Relative symmetrical tolerance / of the operation frequency	%	10
Insulation voltage / rated value	V	600
Kompensation of the mains voltage swing	%	20
Partial load / for load monitoring	Α	1.6
Metering range current	Α	0 55

Control circuit:		
type of voltage		AC/DC
Control supply voltage		
• for DC / rated value	V	24 24
• at 50 Hz / at AC / rated value	V	24 24
• at 60 Hz / at AC / rated value	V	24 24
• at 50 Hz / for AC / final value for signal<0>-recognition	V	14
• at 60 Hz / for AC / final value for signal<0>-recognition	V	14
for DC / final value for signal<0>-recognition	V	15
Supply voltage frequency / for auxiliary and control current circuit		
rated value	Hz	50 60
Tolerance of the line frequency	Hz	5
Relative symmetrical tolerance / of the supply voltage frequency	%	10
Control current / for AC / rated value	mA	40
Control current / for DC / rated value	mA	40
Response delay time	s	0.1 3

Number of NC contacts / for auxiliary contacts         1           Number of change-over switches / for auxiliary contacts         1           Operating voltage / of the auxiliary contacts         V         15 30           of or DC         V         15 30           Operating current / of the auxiliary contacts         V         15 30           Fior AC         mA         5 1,000           efter DC         mA         5 1,000           Installation/mounting/dimensions:           Type of mounting         dip-on           Installation/mounting/dimensions:           Type of fixing/fixation / series installation         MB           Wildth         MB         45           Height         mm         45           Height         mm         111.5           Connections:           Example of the electrical connection           of or auxiliary and control current circuit         MS           Design of the effective connectable conductor cross-section         4 x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)           of or auxiliary and control contacts         1 x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)           * for auxiliary and control contacts         1 x (AWG 20 12)      <	Auxiliary circuit:		
Number of change-over switches / for auxiliary contacts  - for AC - for DC	Number of NC contacts / for auxiliary contacts		1
Operating voltage / of the auxiliary contacts  - for AC - for DC Operating current / of the auxiliary contacts  - for AC - for AC - for BC Operating current / of the auxiliary contacts  - for AC - for BC Operating current / of the auxiliary contacts  - for AC - for BC - fo	Number of NO contacts / for auxiliary contacts		1
Flor AC	Number of change-over switches / for auxiliary contacts		1
• for DC  Operating current / of the auxiliary contacts  • for AC • for DC  mA 5 1,000  Installation/mounting/dimensions:  Type of mounting  Type of fixing/fixation / series installation  Width  mm 45  Height  Depth  Depth  Design of the electrical connection • for auxiliary and control contacts  • solid • finely stranded • with conductor end processing • tor AWG conductors flor auxiliary and control contacts  • solid • stranded wire • with conductor end processing / • without conductor end processing / • without conductor final cutting • solid • stranded wire • with conductor end processing / • without conductor final cutting • without conductor final cutting • solid • stranded wire • with conductor end processing / • without conductor final cutting • without conductor final cutting • solid • stranded wire • with conductor end processing / • without conductor final cutting • without conductor end processing / • without conductor final cutting • without conductor end processing / • without conductor final cutting  AWG number / as coded connectable conductor cross-section • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts	Operating voltage / of the auxiliary contacts		
Operating current / of the auxiliary contacts <ul> <li>for AC</li> <li>for DC</li> <li>mA</li> <li>5 1,000</li> </ul> Installation/mounting/dimensions:         Type of mounting       clip-on         Type of fixing/fixation / series installation       Yes         Width       mm       45         Height       mm       69.5         Connections:          Connections         Esign of the electrical connection         • for auxiliary and control current circuit       screw-type terminals         Design of the thread / of the connection screw / of the auxiliary and control current circuit         Design of the thread / of the connectable conductor cross-section       for auxiliary and control contacts         * solid       1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)         * finely stranded       * with conductor end processing       1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)         * for AWG conductors / for auxiliary and control contacts       1x (AWG 20 12)         Conductor cross-section that can be connected / for auxiliary and control contacts       1x (AWG 20 12)         Conductor cross-section that can be connected / for auxiliary and control contacts       - solf AWG number / as coded connectable conductor cross-section       - solf AWG number / as coded connectable conductor cross-section	• for AC	V	15 30
• for AC • for DC  mA  5 1,000  Installation/mounting/dimensions:  Type of mounting  Type of fixing/fixation / series installation  Width  mm  45  Height  Depth  mm  45  Connections:  Connections:  Design of the electrical connection • for auxiliary and control current circuit  Design of the thread / of the connection screw / of the auxiliary and control pins  Type of the connectable conductor cross-section • for auxiliary and control current circuit  Conductor read control current circuit  1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²) • with conductor final cutting • for AWG conductors / for auxiliary and control contacts • solid • stranded wire • with conductor final cutting • stranded wire • with conductor final cutting • for AWG conductors / for auxiliary and control contacts • solid • stranded wire • with conductor end processing / • without conductor final cutting • with conductor final cutting • for AWG conductors / for auxiliary and control contacts • solid • stranded wire • with conductor end processing / • without conductor final cutting • with conductor fi	• for DC	V	15 30
Installation/mounting/dimensions:  Type of mounting Type of fixing/fixation / series installation Type of the electrical connection Type of the electrical connection Type of the connectal of the connection screw / of the auxiliary and control pins Type of the connectable conductor cross-section Type of the connectable conductor or or auxiliary and control contacts Type of the connectable conductor or cross-section Type of the connectable conductor or cross-section Type of the connectable conductor or cross-section Type of the connectable conductor contacts Type of the connectab	Operating current / of the auxiliary contacts		
Installation/mounting/dimensions:  Type of mounting Type of fixing/fixation / series installation Type of the electrical connection Type of the electrical connection Type of the electrical connection Type of the connectal or series / of the auxiliary and control pins Type of the connectal or series / of the auxiliary Type of the connectable conductor cross-section Type of the connectable conductor or fix (AWG 20 12) Type of the connectable conductor or cross-section Type of the connectable conductor contacts Type of the con	• for AC	mA	5 1,000
Type of fixing/fixation / series installation  Width mm 45  Height mm 111.5  Depth mm 69.5  Connections:  Design of the electrical connection • for auxiliary and control contacts • solid • finely stranded • with conductor end processing • without conductor final cutting • for AWG conductor for auxiliary and control contacts • solid • for auxiliary and control contacts • solid • with conductor end processing • without conductor final cutting • with conductor final cutting • with conductor final cutting • with conductor end processing / without conductor final cutting • with conductor final cutting • with conductor end processing / without conductor final cutting • with condu	• for DC	mA	5 1,000
Type of fixing/fixation / series installation  Width mm 45  Height mm 511.5  Depth mm 69.5  Connections:  Design of the electrical connection • for auxiliary and control current circuit  Design of the thread / of the connection screw / of the auxiliary and control pins  Type of the connectable conductor cross-section • for auxiliary and control contacts • solid • finely stranded • with conductor end processing • without conductor final cutting • for AWG conductors / for auxiliary and control contacts • solid • solid • with conductor final cutting • for AWG conductors / for auxiliary and control contacts • solid • with conductor final cutting • with conductor and processing / • with conductor end processing / • with conductor final cutting • with conductor final cut	Installation/mounting/dimensions:		
Width	Type of mounting		clip-on
Height	Type of fixing/fixation / series installation		Yes
Depth  Connections:  Design of the electrical connection • for auxiliary and control current circuit  Design of the thread / of the connection screw / of the auxiliary and control pins  Type of the connectable conductor cross-section • for auxiliary and control contacts • solid • finely stranded • with conductor end processing • without conductor final cutting • for AWG conductors / for auxiliary and control contacts • solid • stranded wire • with conductor end processing / • stranded wire • with conductor end processing / • without conductor final cutting • stranded wire • with conductor end processing / • without conductor final cutting • stranded wire • with conductor final cutting • stranded wire • with conductor final cutting • without conductor final cutting • with conductor final cutting • stranded wire • with conductor final cutting • with conductor final cutting • stranded wire • with conductor final cutting • stranded wire • with conductor final cutting • stranded wire • with conductor final cutting • the conductor final cutting •	Width	mm	45
Design of the electrical connection  • for auxiliary and control current circuit  Design of the thread / of the connection screw / of the auxiliary and control pins  Type of the connectable conductor cross-section  • for auxiliary and control contacts  • solid  • with conductor end processing  • without conductor final cutting  • for AWG conductors / for auxiliary and control contacts  • solid  • solid  • with conductor final cutting  • for AWG conductors / for auxiliary and control contacts  • solid  • stranded wire  • with conductor end processing /  • without conductor final cutting  • stranded wire  • with conductor end processing /  • with conductor final cutting  AWG number / as coded connectable conductor cross-section  • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts	Height	mm	111.5
Design of the electrical connection  • for auxiliary and control current circuit  Design of the thread / of the connection screw / of the auxiliary and control pins  Type of the connectable conductor cross-section  • for auxiliary and control contacts  • solid  • finely stranded  • with conductor end processing  • without conductor / for auxiliary and control contacts  • solid  • for AWG conductors / for auxiliary and control contacts  • solid  • stranded wire  • with conductor end processing /  • without conductor final cutting  • stranded wire  • with conductor end processing /  • without conductor final cutting  • stranded wire  • with conductor end processing /  • with conductor end processing /  • without conductor final cutting  AWG number / as coded connectable conductor cross-section • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts   M3  M3  M3  M3  M3  M3  M3  M3  M3	Depth	mm	69.5
• for auxiliary and control current circuit  Design of the thread / of the connection screw / of the auxiliary and control pins  Type of the connectable conductor cross-section     • for auxiliary and control contacts     • solid     • finely stranded     • with conductor end processing     • without conductor final cutting     • for AWG conductors / for auxiliary and control contacts      • solid     • solid     • solid     • solid     • with conductor end processing     • without conductors / for auxiliary and control contacts  Conductor cross-section that can be connected / for auxiliary and control contacts  • solid     • stranded wire     • with conductor end processing /     • without conductor final cutting  AWG number / as coded connectable conductor cross-section     • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts   M3  M3  M3  M3  M3  M3  M3  AX (0.5 2.5 mm²), 2x (0.5 1.0 mm²)  1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)  1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)  1x (AWG 20 12)  Type of the connectable conductor contacts  mm²  0.5 2.5	Connections:		
Design of the thread / of the connection screw / of the auxiliary and control pins  Type of the connectable conductor cross-section  • for auxiliary and control contacts  • solid  • with conductor end processing  • without conductor final cutting  • for AWG conductors / for auxiliary and control contacts  • solid  • stranded wire  • with conductor end processing /  • with conductor end processing /  • with conductor end processing /  • with conductor final cutting  • solid  • stranded wire  • with conductor final cutting  AWG number / as coded connectable conductor cross-section  • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts	Design of the electrical connection		
and control pins  Type of the connectable conductor cross-section  • for auxiliary and control contacts  • solid  • with conductor end processing  • without conductor final cutting  • for AWG conductors / for auxiliary and control contacts  • solid  • stranded wire  • with conductor end processing /  • with conductor end processing /  • with conductor final cutting  • for AWG conductors / for auxiliary and control contacts  Conductor cross-section that can be connected / for auxiliary and control contacts  • solid  • stranded wire  • with conductor end processing /  • without conductor final cutting  AWG number / as coded connectable conductor cross-section  • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts	for auxiliary and control current circuit		screw-type terminals
• for auxiliary and control contacts     • solid     • finely stranded     • with conductor end processing     • without conductor final cutting     • for AWG conductors / for auxiliary and control contacts  Conductor cross-section that can be connected / for auxiliary and control contacts  • solid     • stranded wire     • with conductor end processing /     • with conductor end processing /     • with conductor final cutting  AWG number / as coded connectable conductor cross-section     • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts   1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)  1x (0.5 2.5 mm²	-		M3
* solid     * finely stranded     * with conductor end processing     * without conductor final cutting     * for AWG conductors / for auxiliary and control contacts  Conductor cross-section that can be connected / for auxiliary and control contacts  * solid     * solid     * stranded wire     * with conductor end processing /     * without conductor final cutting  AWG number / as coded connectable conductor cross-section     * for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  * Tightening torque / for auxiliary and control contacts  * solid  * mm²	Type of the connectable conductor cross-section		
• finely stranded     • with conductor end processing     • without conductor final cutting     • for AWG conductors / for auxiliary and control contacts  Conductor cross-section that can be connected / for auxiliary and control contacts  • solid     • with conductor end processing /     • with conductor end processing /     • without conductor final cutting  AWG number / as coded connectable conductor cross-section     • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts    Tightening torque / for auxiliary and control contacts   Tightening torque / for au	for auxiliary and control contacts		
<ul> <li>with conductor end processing</li> <li>without conductor final cutting</li> <li>for AWG conductors / for auxiliary and control contacts</li> <li>Conductor cross-section that can be connected / for auxiliary and control contacts</li> <li>solid</li> <li>stranded wire</li> <li>with conductor end processing /</li> <li>with conductor final cutting</li> <li>with conductor final cutting</li> <li>without conductor final cutting</li> <li>AWG number / as coded connectable conductor cross-section</li> <li>for auxiliary and control contacts</li> <li>Skinning length / of the cable / for auxiliary and control contacts</li> <li>Tightening torque / for auxiliary and control contacts</li> </ul>	• solid		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
without conductor final cutting     for AWG conductors / for auxiliary and control contacts  Conductor cross-section that can be connected / for auxiliary and control contacts  Solid  Stranded wire  with conductor end processing /  without conductor final cutting  AWG number / as coded connectable conductor cross-section  for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts  * without conductor final cutting  * Tightening torque / for auxiliary and control contacts  * without conductor final cutting  * Tightening torque / for auxiliary and control contacts  * Tightening torque / for auxiliary	• finely stranded		
• for AWG conductors / for auxiliary and control contacts      1x (AWG 20 12)  Conductor cross-section that can be connected / for auxiliary and control contacts      • solid     • stranded wire     • with conductor end processing /     • without conductor final cutting  AWG number / as coded connectable conductor cross-section     • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts  1x (AWG 20 12)  mm² 0.5 2.5  mm² 0.5 2.5  12 20	<ul> <li>with conductor end processing</li> </ul>		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
Conductor cross-section that can be connected / for auxiliary and control contacts  • solid  • stranded wire  • with conductor end processing /  • without conductor final cutting  AWG number / as coded connectable conductor cross-section  • for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts	<ul> <li>without conductor final cutting</li> </ul>		1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
and control contacts  • solid  • stranded wire  • with conductor end processing /  • without conductor final cutting  AWG number / as coded connectable conductor cross-section  • for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts   mm²  0.5 2.5  mm²  0.5 2.5  mm²  12 20  7	for AWG conductors / for auxiliary and control contacts		1x (AWG 20 12)
* stranded wire     * with conductor end processing /     * without conductor final cutting  AWG number / as coded connectable conductor cross-section     * for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts  **Total control contacts**  **Total control			
with conductor end processing /     without conductor final cutting  AWG number / as coded connectable conductor cross-section     for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts  mm  7	• solid	mm²	0.5 2.5
without conductor final cutting	• stranded wire		
AWG number / as coded connectable conductor cross-section  • for auxiliary and control contacts  12 20  Skinning length / of the cable / for auxiliary and control contacts  mm  7  Tightening torque / for auxiliary and control contacts	• with conductor end processing /	mm²	0.5 2.5
• for auxiliary and control contacts  Skinning length / of the cable / for auxiliary and control contacts  Tightening torque / for auxiliary and control contacts  12 20  7	without conductor final cutting	mm²	0.5 2.5
Skinning length / of the cable / for auxiliary and control contacts mm 7  Tightening torque / for auxiliary and control contacts	AWG number / as coded connectable conductor cross-section		
Tightening torque / for auxiliary and control contacts	for auxiliary and control contacts		12 20
	Skinning length / of the cable / for auxiliary and control contacts	mm	7
• with screw-type terminals N·m 0.5 0.6	Tightening torque / for auxiliary and control contacts		
	with screw-type terminals	N⋅m	0.5 0.6

### Tightening torque (lbf-in) / for auxiliary and control contacts

• with screw-type terminals

lbf-in

4.5 ... 5.3

# Certificates/approvals:

**General Product Approval** 

**EMC** 

Declaration of Conformity

**Test Certificates** 











Type Test
Certificates/Test
Report

#### other

Environmental Confirmations

## Further information:

Information- and Downloadcenter (Catalogs, Brochures,...)

http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)

http://www.siemens.com/industrial-controls/mall

**CAx-Online-Generator** 

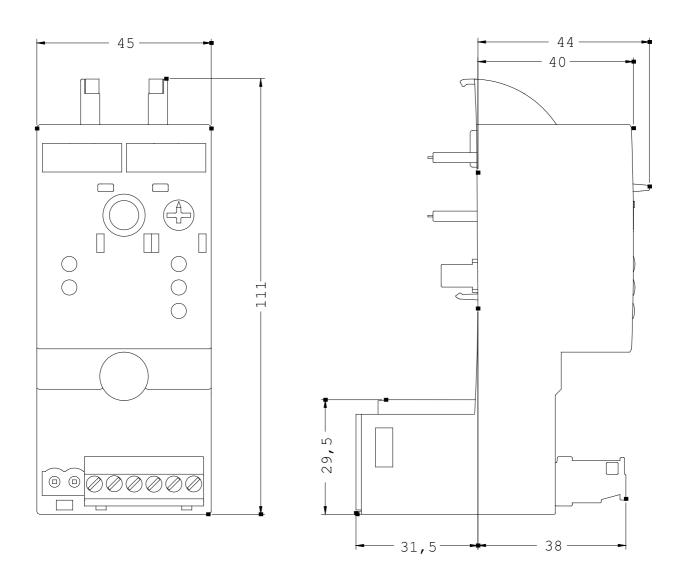
http://www.siemens.com/cax

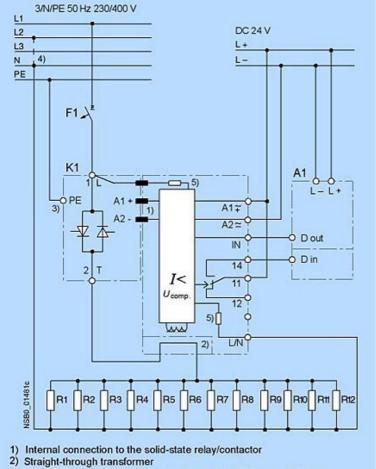
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

http://support.automation.siemens.com/WW/view/en/3RF2950-0GA16/all

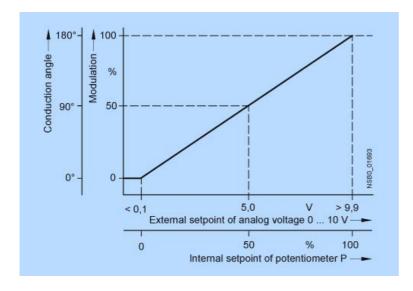
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=3RF2950-0GA16}}$ 





- 3) Make PE/ground connection according to installation regulations
- Connection of L/N contact with
   3RF29 ..-0GA.3 load monitoring on neutral conductor N (e.g. 230 V),
   3RF29 ..-0GA.6 load monitoring on a second phase (e.g. 400 V)
- 5) Voltage detection not electrically isolated (3 M $\Omega$  per path)



Feb 18, 2013 last change: